Light Installation Guide (Ceiling Mounted)

CE

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RECOMMENDED MOUNTING LOCATIONS

EQUIPMENT ALERT

The orientation of the ceiling plate is crucial to ensure proper range of motion. Rotate the ceiling plate until the strain relief bracket is positioned as shown in Figure 1.

NOTE

The light system should be mounted on the opposite side of the doctor's normal work position.

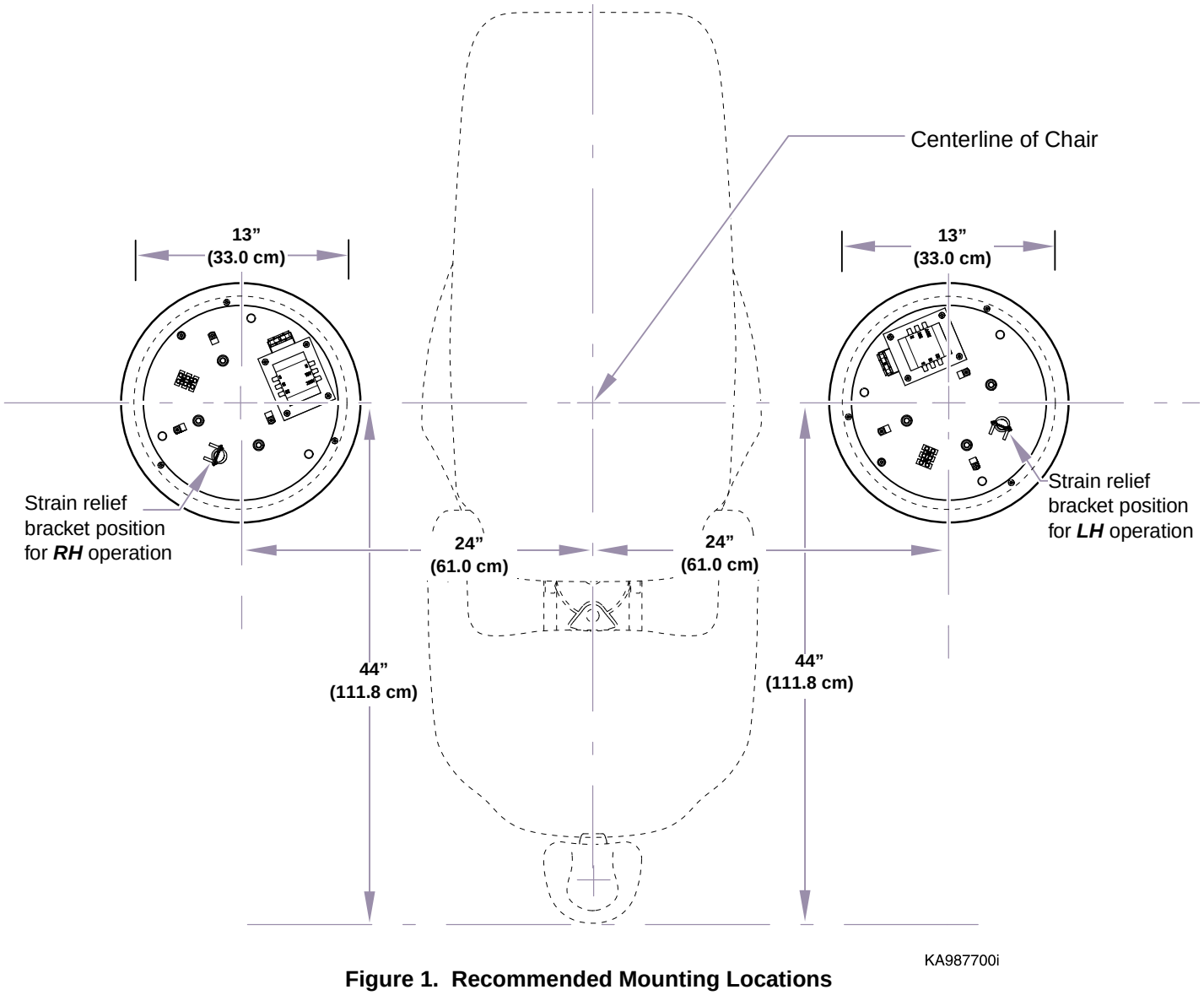

Figure 1. Recommended Mounting Locations

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CEILING SUPPORT STRUCTURE

NOTE
Midmark does not supply the ceiling support structure. The illustrations in Figure 2 are for suggestion only. Consult a qualified professional to install the appropriate support structure for the facility.

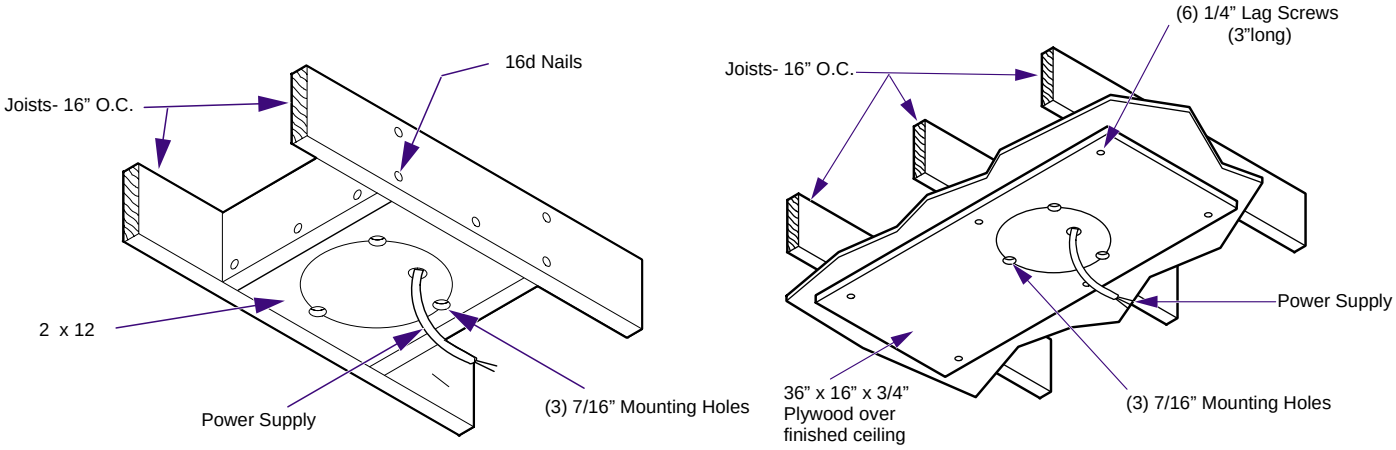
The weight and torque listed is for the lighting system only.

Lighting System (only)

Weight (max.):.....70 lbs. (31.7 kg)
Torque (max.):.....70 ft-lbs. (94.9 N m)

The ceiling structure must support the light system without deflection. To prevent the suspension arm from drifting, the ceiling plate must deflect no more than ***1/16 in. (1.6 mm) over a 12 in. (30.5 cm) distance.***

Wood Framed Ceiling



Suspended Ceilings

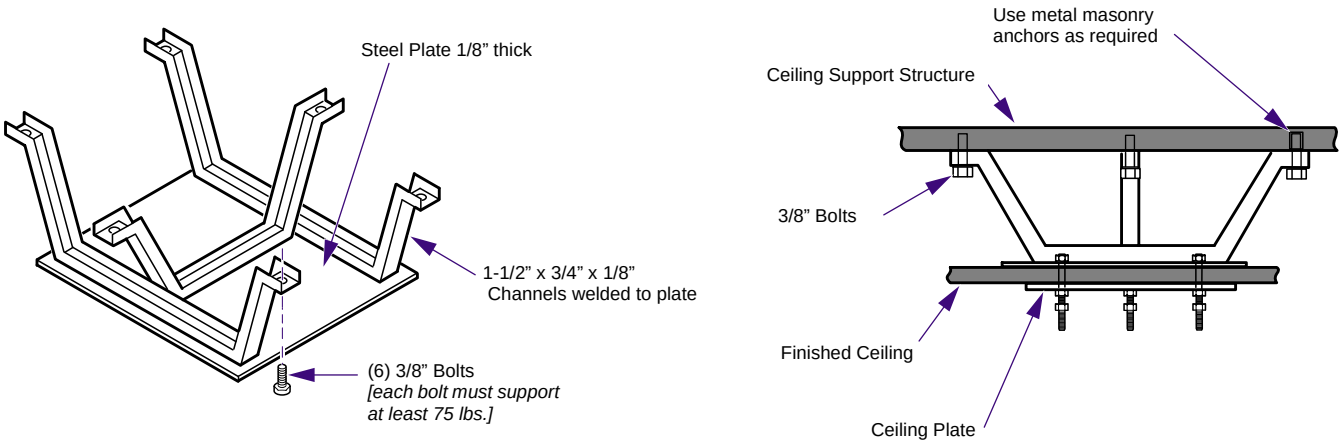


Figure 2. Recommended Ceiling Support Structure

DIMENSIONS

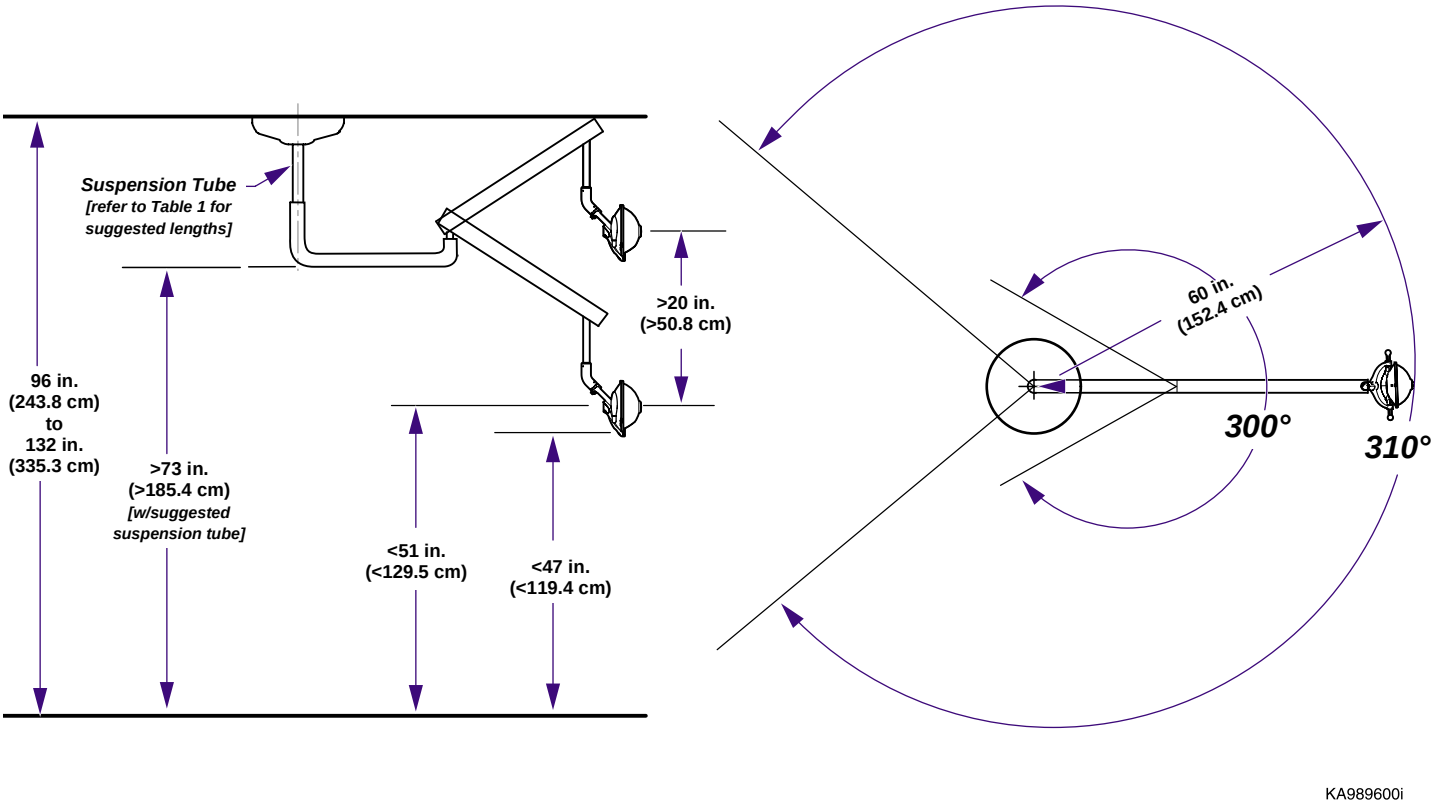


Figure 3. Dimensions

Table 1. Suspension Tube Recommendations

Mounting Height	Suspension Tube Part Number	Suspension Tube Length
96 to 98 in. (243.8 to 248.9 cm)	153651-001	10.25 in. (26.0 cm)
99 to 102 in. (251.5 to 259.1 cm)	153651-002	14.25 in. (36.2 cm)
103 to 106 in. (261.6 to 269.2 cm)	153651-003	18.25 in. (46.3 cm)
107 to 110 in. (271.8 to 279.4 cm)	153651-004	22.25 in. (56.5 cm)
111 to 114 in. (281.9 to 289.5 cm)	153651-005	26.25 in. (66.7 cm)
115 to 118 in. (292.1 to 299.7 cm)	153651-006	30.25 in. (76.8 cm)
119 to 122 in. (302.3 to 309.9 cm)	153651-007	34.25 in. (87.0 cm)
123 to 126 in. (312.4 to 320.0 cm)	153651-008	38.25 in. (97.1 cm)
127 to 130 in. (322.6 to 330.2 cm)	153651-009	42.25 in. (107.3 cm)
>130 in. (>330.2 cm)	153651-010	46.25 in. (117.5 cm)

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CEILING PLATE INSTALLATION

WARNING
Disconnect facility power before performing this installation. Failure to comply could result in serious personal injury.

NOTE
Refer to ***Recommended Mounting Locations*** section of this module before performing the following procedure.

(1) Position ceiling plate (1) or template ***[supplied on shipping carton]***, on support structure and mark the location of three mounting holes and access hole for facility power line; then drill holes.

NOTE
The customer must provide the wiring to power the lighting system. The lighting system requires 115/230 VAC input voltage. Wiring should be two conductor w/ground, 14 gauge copper, rated for 300 VAC (minimum). Connect and route wiring according to state and local codes.

(2) Route facility power line (2) down thru power line access hole in ceiling ***[drilled in step 1]***.

(3) Pull facility power line (2) thru strain relief bracket (3) on ceiling plate (1).

(4) Align ceiling plate (1) with holes drilled in step 1; then secure ceiling plate to ceiling support structure with appropriate hardware ***[not provided].***

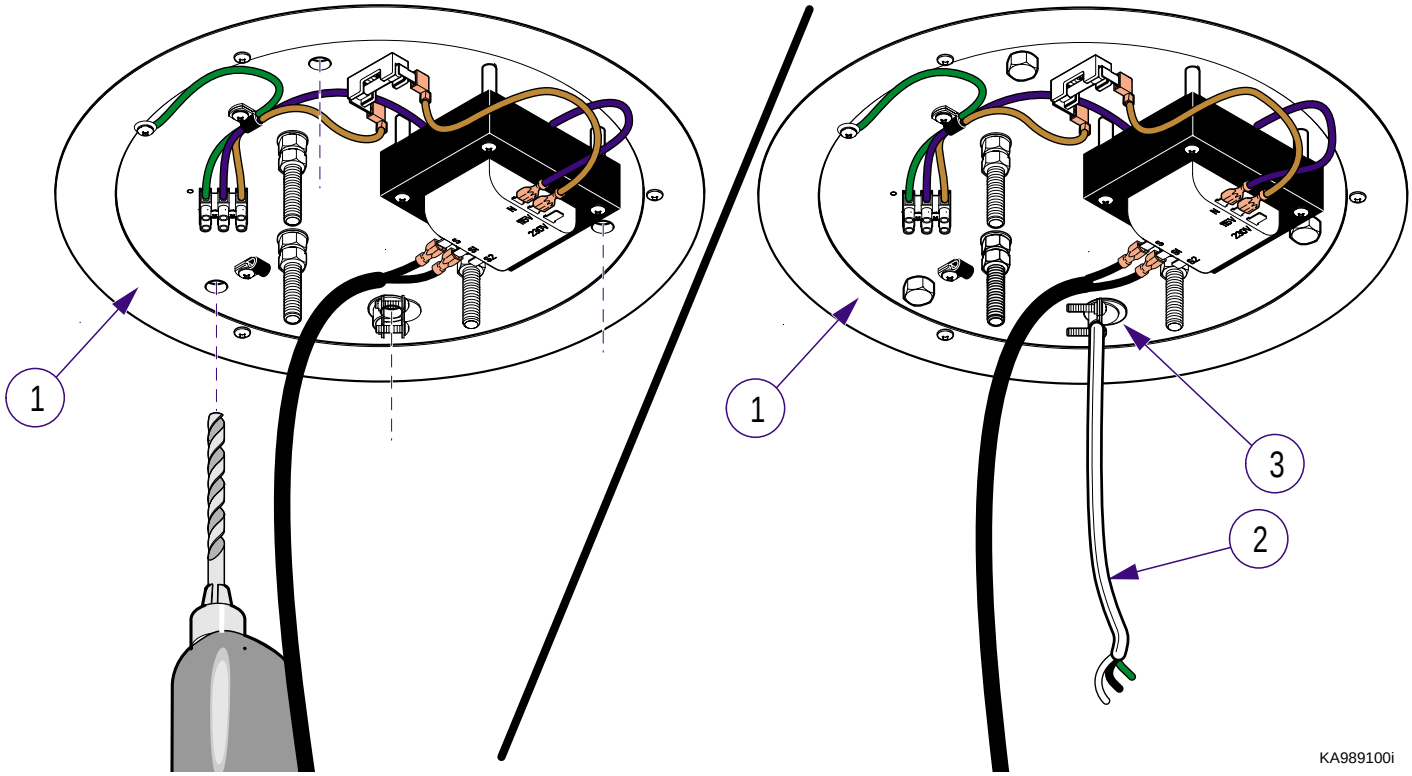

Figure 4. Ceiling Plate Installation

WIRING INSTALLATION

(1) Insert wires from facility power line (1, Figure 5) into proper terminals of terminal block (2) ***[see label on ceiling plate]***; then tighten screws (3).

(2) Secure facility power line (1) to ceiling plate (4) using cable clamp (5).

(3) Tighten two strain relief screws (6) to secure facility power line (1) in place.

NOTE
If facility voltage is **230 VAC**, perform step 4. Do not perform this step if facility voltage is 115 VAC.

(4) Disconnect brown electrical lead (7) from ***115V*** tap of transformer (8) and connect to ***230V*** tap.

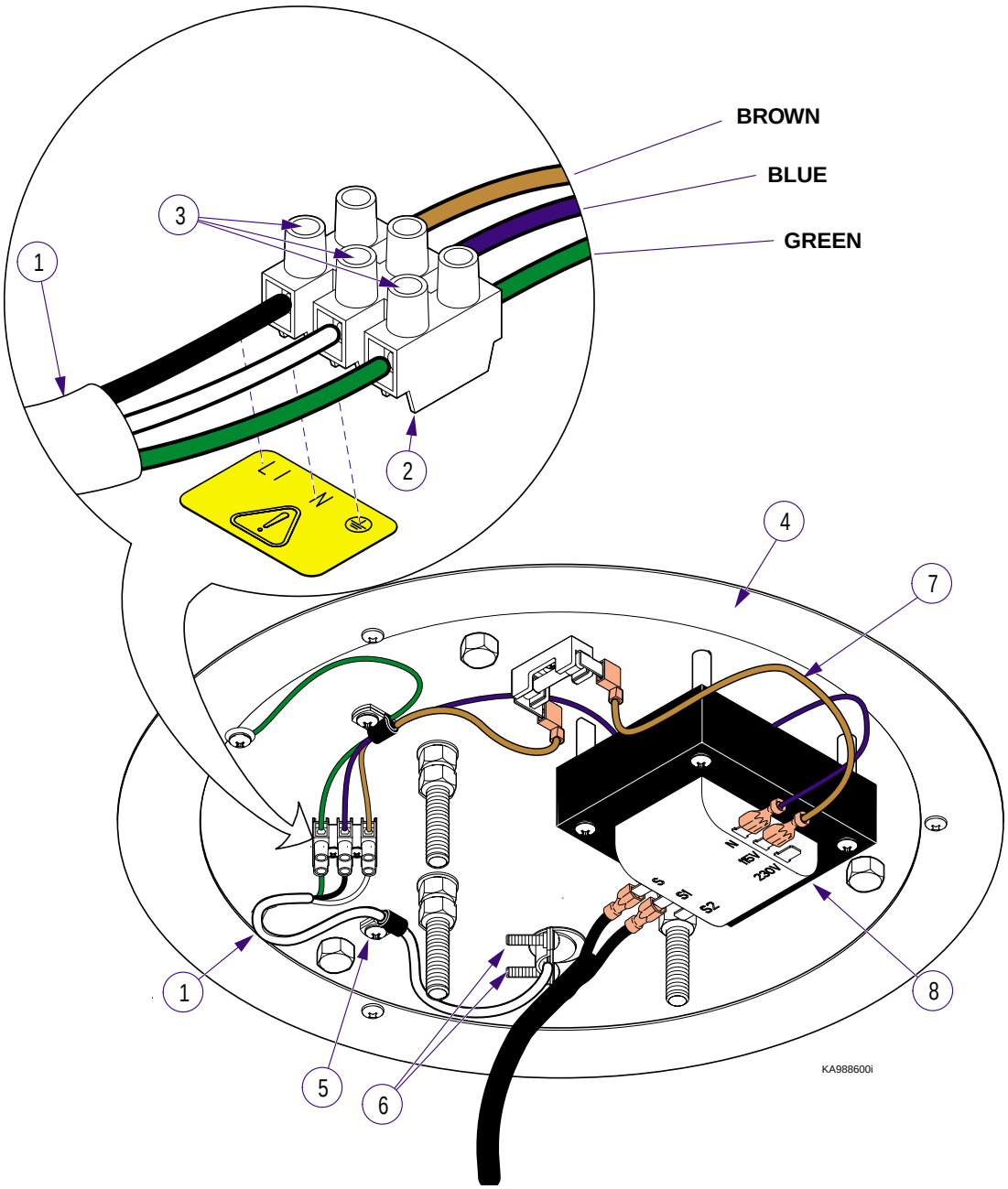

Figure 5. WIring Installation

SUSPENSION TUBE INSTALLATION

EQUIPMENT ALERT
In the following step, position “window” in supension tube so that it is aligned with the strain relief bracket on ceiling plate. This is crucial to ensure proper arm rotation.

In addition, install clevis pin so that cotter pin is on the same side as the transformer. This will allow access to the cotter pin after mounting flange is installed.

(1) Align hole in suspension tube (1, Figure 6) with hole in mounting flange (2); then install clevis pin (3) and cotter pin (4).

(2) Tighten four set screws (5)

NOTE
If suspension tube is 26 in. (66 cm) or longer, connect wire harness extension(s) ***[included w/suspension tube]*** before performing step 3.

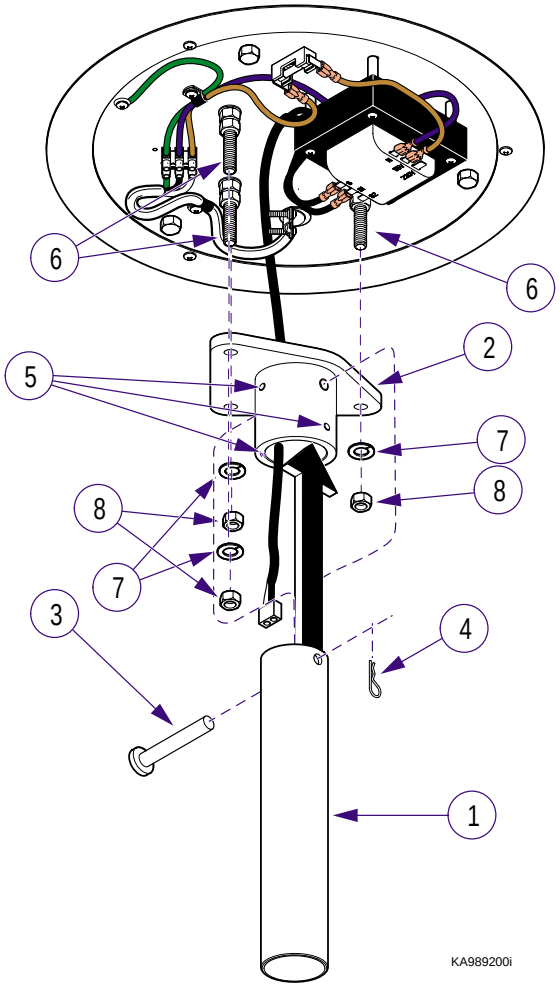

Figure 6. Suspension Tube Installation

(3) Route wire harness(es) down thru suspension tube (1) while sliding mounting flange (2) onto three bolts (6); then install three lockwashers (7) and three hex nuts (8).

LEVELING SUSPENSION TUBE / CEILING COVER INSTALLATION

(1) Place level on suspension tube (1, Figure 7) and adjust three hex nuts (2) until suspension tube is level; then tighten three jam nuts (3).

WARNING
The ceiling cover **must** be mounted flush with the ceiling plate. Failure to do so will result in shock and/or fire hazard due to exposed electrical connections.

(2) Slide ceiling cover (4) onto suspension tube (1) up to ceiling plate; then tighten two set screws (5).

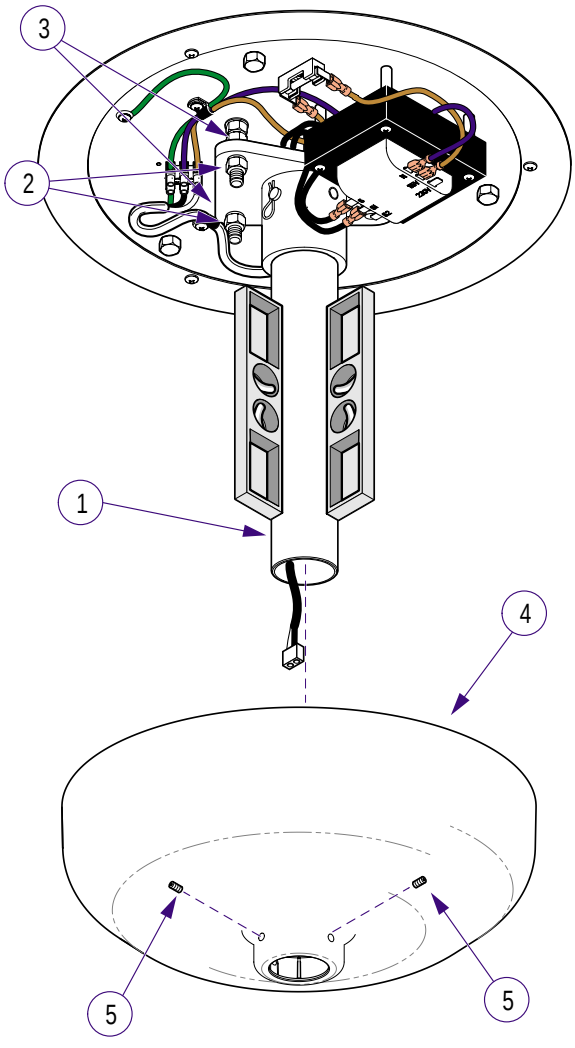

Figure 7. Leveling Suspension Tube / Ceiling Cover Installation

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LIGHT ARM INSTALLATION

(1) Slide collar (1, Figure 8) onto suspension tube (2) *(with rounded edge of collar downward)*; then tighten set screw (3) to temporarily hold collar in place.

(2) Fold excess length of wire harness (4) and push up into suspension tube (2) as shown.

EQUIPMENT ALERT
Use an assistant to secure fixed arm assembly when performing the following steps. Failure to do so could result in damage to light-head.

(3) Connect wire harness (4) ***[from suspension tube]*** to connector (5) in the end of fixed arm (6).

EQUIPMENT ALERT
To ensure quiet operation, apply a thin coat of lubricant (included w/light) to inside of suspension tube (2) and bearing shaft of fixed arm (6) before performing the following step.

(4) Insert fixed arm (6) into suspension tube (2); then install key (7) thru hole (A) so that it fits into groove of fixed arm.

(5) Loosen set screw (3) and slide collar (1) all the way down; tighten set screw (3).

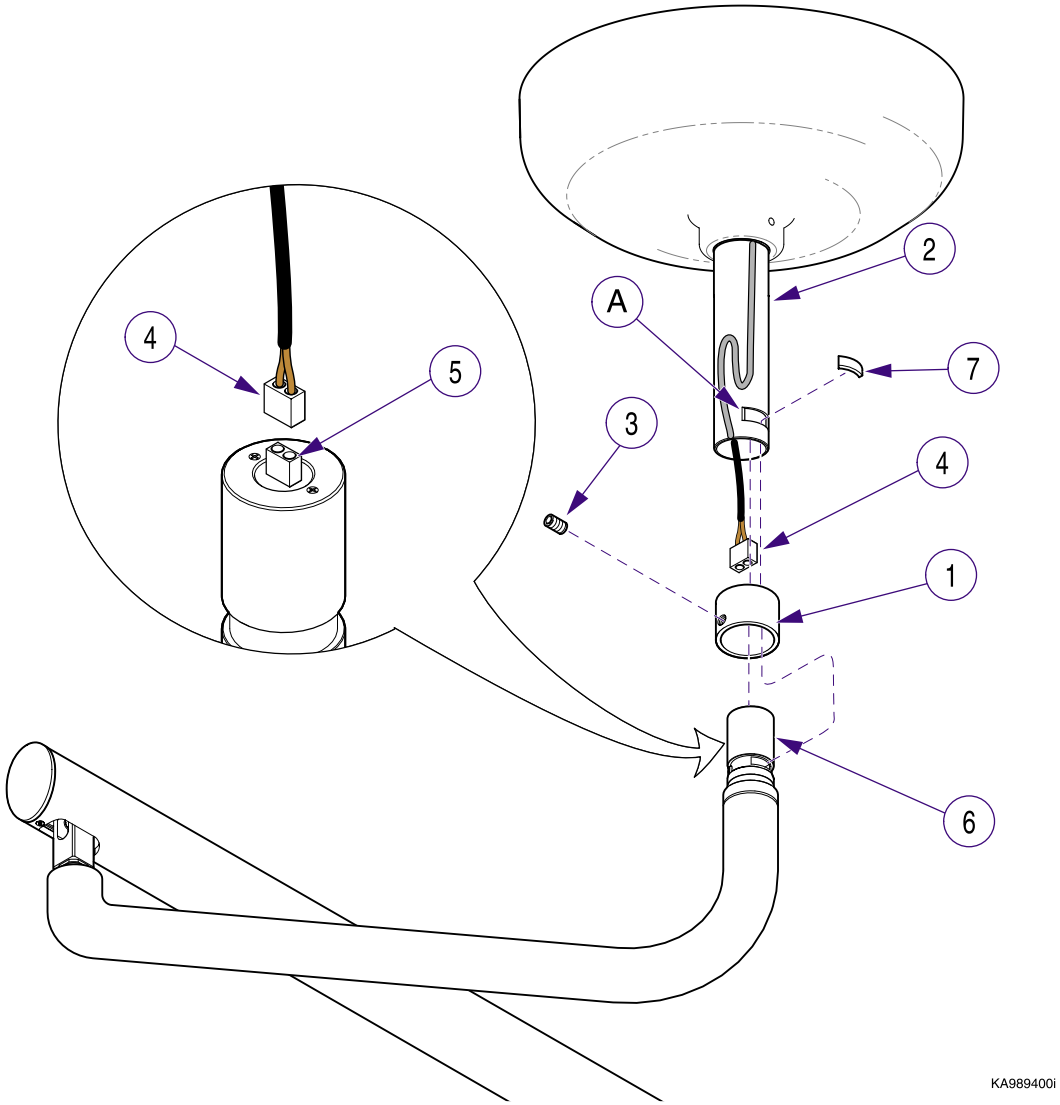
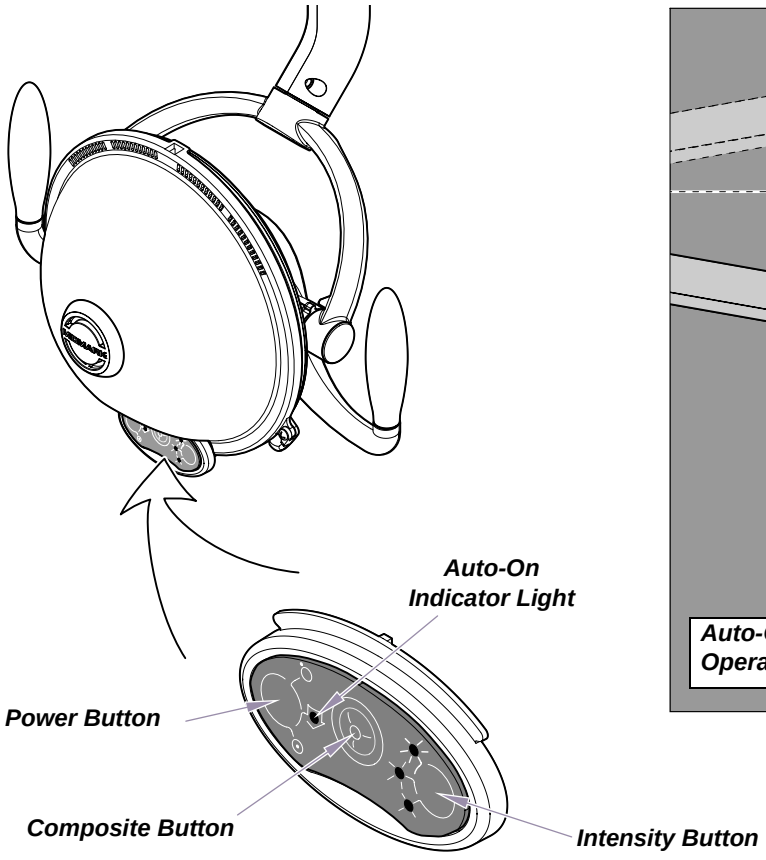


Figure 8. Light Arm Installation

INSTALLATION CHECKLIST

EQUIPMENT ALERT
Answering “NO” to any of the following questions indicates improper installation or a product malfunction. Check all connections, then refer to the Midmark Dental Light Service & Parts manual for corrective action if necessary.

Yes	No	
		With facility power ON (and light OFF)...
☐	☐	*When **Power Button** is pressed once, does light illuminate?*
☐	☐	*When **Power Button** is pressed twice, does **Auto-On Indicator Light** illuminate?*
☐	☐	*With **Auto-On** function selected, does light illuminate when pulled dowward? (Refer to User’s Guide for adjustment).*
☐	☐	*When **Power Button** is pressed three times, does light shut off?*
☐	☐	*When **Composite Button** is depressed, does light become noticeably dimmer?*
☐	☐	*Does **Intensity Button** adjust light beam to three settings (High, Medium, Low)?*



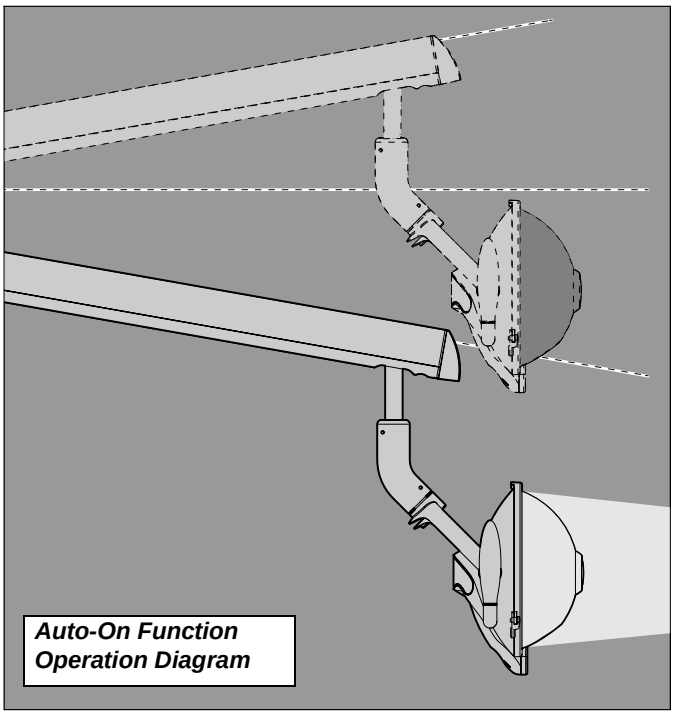


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Figure 9. Operational Checks

INSTALLATION CHECKLIST - *continued*

EQUIPMENT ALERT
Answering "NO" to any of the following questions indicates an adjustment is necessary. Refer to the adjustment procedures in Figure 5.

Yes	No	
☐	☐	*Does light move easily at all pivot points?*
☐	☐	*Does **Flex Arm** stay in position without "drifting"?*
☐	☐	*Does lighthead stay in position (at all pivot points) without "drifting"?*

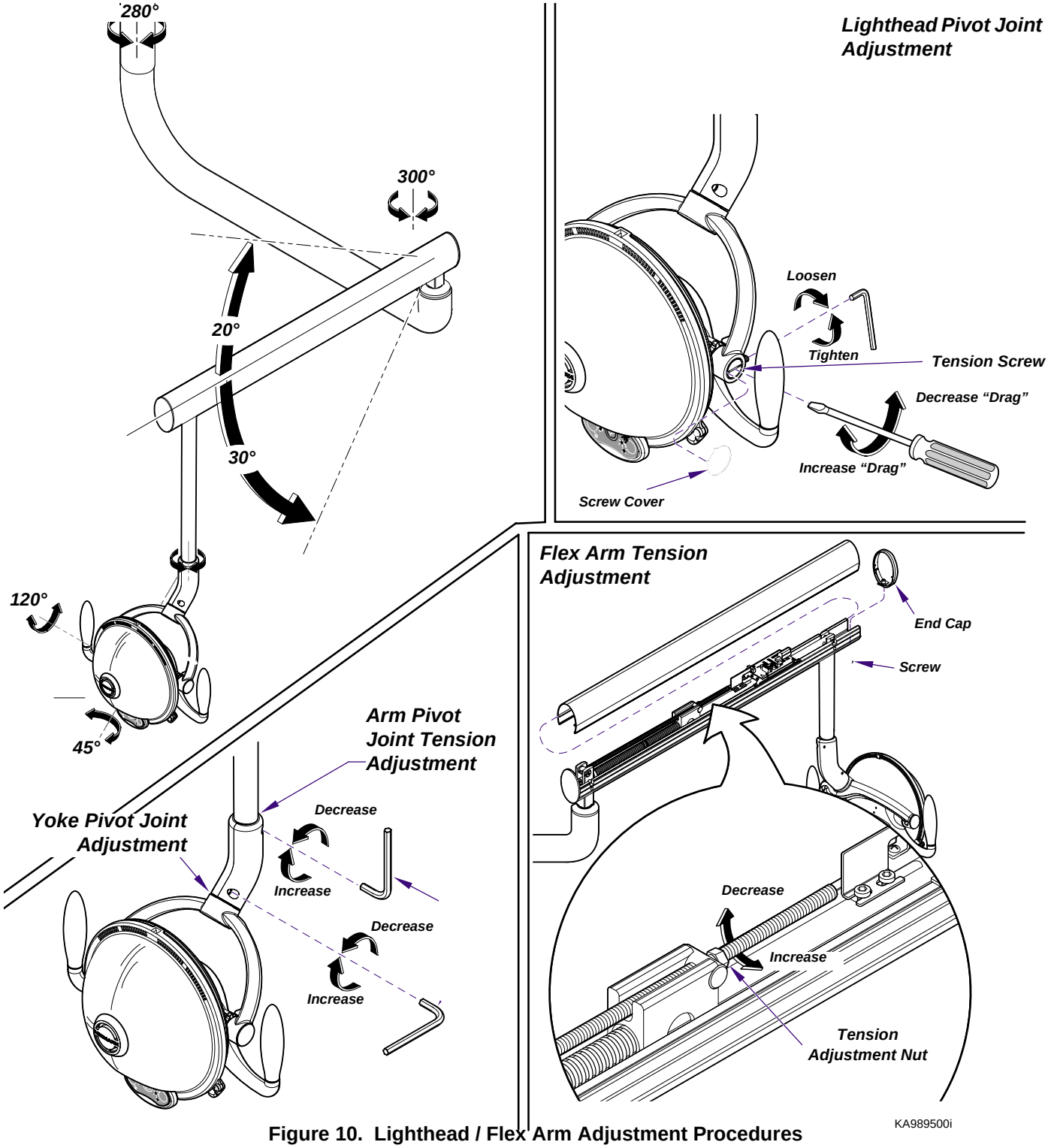

Figure 10. Lighthead / Flex Arm Adjustment Procedures

SPECIFICATIONS

Specifications

Description **Data**

Electrical Requirements: .....115 / 230 VAC ±10%, 50/60 Hz
1.2 / 0.6 amp, single phase

Bulb: .....24 VAC, 150 W Tungston Halogen
Power to Bulb
@ **Maximum Intensity:**..... 15.7 VAC, 5.5 amps

Fuse: ..... 1/4 x 1 1/4, 1.5 amp Type T (Time Delay), 250 VAC

Weight: ..... 70 lbs. (31.7 kgs)
Torque:.....70 ft-lbs. (94.9 N m)

Classifications: .....Class 1, Type B, Applied Part, Ordinary Equipment

Certifications:
Midmark Corporation.....ISO-9001

Complies to applicable requirements of: ..... UL2601-1, CAN/CSA 22.2, #601.1- M90, MDD 93/42/EEC, Annex VII [EN60601-1, EN60601-1-2]

TRANSPORTATION / STORAGE CONDITIONS

- Ambient Temperature Range:.....-22°F to 140°F (-30°C to 60°C)
- Relative Humidity.....10% to 90% (non-condensing)
- Atmospheric Pressure .....500hPa to 1060 hPa (0.49atm to 1.05atm)

TORQUE SPECIFICATIONS

Torque specifications apply to hardware used on components unless otherwise noted in these installation instructions:

Torque Specifications

Hardware Size	Torque Values
#6	11 to 21 inch / lbs. (1.2 to 2.3 N•m)
#8	20 to 30 inch / lbs. (2.2 to 3.3 N•m)
#10	32 to 42 inch / lbs. (3.6 to 4.8 N•m)
1/4 inch	75 to 85 inch / lbs. (8.5 to 9.6 N•m)
5/16 inch	18 to 22 ft. / lbs. (24.4 to 29.8 N•m)
3/8 inch	31 to 35 ft. / lbs. (42.0 to 47.5 N•m)
1/2 inch	50 to 60 ft. / lbs. (67.8 to 81.4 N•m)

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